

REMARKS/ARGUMENTS

Claims 1-21 and 23-24 are pending.

Claims 1, 11, 12, and 13 have been amended.

Claim 22 has been cancelled.

Claims 17-21 and 23-24 have been withdrawn.

Support for the amendments is found in the claims and specification (e.g., page 9, line 18; page 15, lines 10-32; page 24, lines 16-25; and page 25, lines 16-27) as originally filed.

No new matter is believed to have been added.

In response to the claim objection, Claims 12 and 13 have been amended to clarify that an amount of the methyl (methyl)acrylate is at least 50% by weight of the total amount of the ethylenically unsaturated monomers E). Claim 1 requires 55-98.99 parts by weight of the ethylenically unsaturated monomers E) in the claimed composition. Claims 12 and 13 require that a specific monomer E), i.e., the methyl (methyl)acrylate of formula (III), was added in the amount of 50% of the total amount of the ethylenically unsaturated monomers E). Thus, claims 12 and 13 further limit claim 1. Applicants request that the rejection be withdrawn.

Claims 1-13 and 16 are rejected under 35 U.S.C. 103(a) over Yamamoto et al., US 5,385,988. Claims 14-15 are rejected under 35 U.S.C. 103(a) over Yamamoto et al. and Owens et al., US 3,793,402. The rejections are traversed because the Yamamoto et al. composite alone or in combination with Owens et al. is produced by a different method and as a result yields a composite different from the claimed composition. More specifically, Yamamoto et al. and Owens et al. do not describe hydrolyzing the alkoxy groups until the hydrolysis is complete and reacting compounds A and B with at least one acid.

The claimed polymerizable composition is produced by reacting silicon compounds with water and at least one acid, thereby hydrolyzing the alkoxy groups until the hydrolysis is

complete, adding (meth)acrylates, ethylenically unsaturated monomers, and polymers to the hydrolyzed product (claim 1).

Although Yamamoto et al. describe the components of the composite encompassing some of the claimed components, the Yamamoto et al. composite is different from the claimed composition. Yamamoto et al. do not describe hydrolyzing the alkoxy groups until the hydrolysis is complete and reacting compounds A and B with at least one acid.

In the Yamamoto et al. composite composition, the silica skeleton of a silica polycondensate is derived from colloidal silica and a silane compound hydrolyzed and *polycondensed on the surface of the colloidal silica*. The Yamamoto et al. composition further comprises a polymer of a radical-polymerizable vinyl compound forming a semi-interpenetrating network structure (col. 2, lines 4-16). The silica polycondensate (B) is obtained by hydrolysis and polycondensation of a silane compound (col. 3, lines 3-23). During this reaction, most of OR₃ groups contained in the silane compound are hydrolyzed, but some OR₃ or OH groups *still remain* on the outer surface of the silica polycondensate (B) (col. 3, lines 18-24). Another words, Yamamoto et al. describe hydrolyzing the silica compound (I) so that some groups are still available (col. 3, lines 3-23). The obtained polycondensate (B) can be uniformly dispersed in the radical-polymerizable vinyl compound (A) (col. 3, lines 18-23). After forming the polycondensate (B) by hydrolysis and polycondensation of a silane compound, a polymerization with the vinyl compound (A) is carried (see claim 1 of Yamamoto et al.). Yamamoto et al. disclose that 0.1 to 2,000 wt. parts of silane compounds is used per 100 parts of the colloidal silica (claim 1).

Thus, hydrolysis and polycondensation of a silane compound *on the surface of the colloidal silica* forming the silica polycondensate (B) are carried out before polymerization and, therefore, the Yamamoto et al. composition is different from that claimed *prior* to polymerization (see the Examiner's assertion that prior to polymerization the Yamamoto et

al. and the claimed compositions are the same, Official Action of February 12, 2008, page 7).

The claimed composition does not comprise the colloidal silica and does not form the silica *polycondensates* on the surface of the colloidal silica forming a dispersion of the colloidal silica in the radical-polymerizable vinyl compound causing gelation (see Yamamoto et al., col. 3). Also, hydrolyzing the alkoxy groups in the claimed composition is conducted until the hydrolysis is complete.

The components A to C of claim 1 (A is a silane derivative; B is water, and C is an acid) are not condensed to colloidal particles but instead are used in combination merely for hydrolyzing the alkoxy groups of the functional alkoxy silane (and transforming the groups into hydroxyl groups) (see pages 14-15 of the present specification) in order to make the groups accessible for the following reaction with the silicate glass. No silica polycondensates forming a dispersion of colloidal silica in the radical-polymerizable vinyl compound causing gelation are formed. In fact, forming silica polycondensates is not even possible in the claimed polymerizable composition because the hydrolyzed silanes are to be consumed for binding the forming polymers to the silicate glass.

Thus, Yamamoto et al. do not describe or suggest the claimed polymerizable composition.

Owens et al. do not cure the deficiency of Yamamoto et al. Owens et al. describe an impact resistant thermoplastic composition comprising a multi-stage sequentially produced polymer (col. 1). The Owens et al. composition comprises homopolymers of an alkyl methacrylate (claim 1; col. 11, lines 35-51). Owens et al. do not describe the claimed polymerizable composition because the Owens et al. composition does not comprise the claimed components and is produced by a different method. Thus, substituting the alkyl

Application No. 10/500,362
Reply to Official Communication of August 14, 2008

methacrylate of Owens et al. into the Yamamoto et al. composite still does not produce the claimed polymerizable composition.

Thus, Yamamoto et al. and Owens et al. do not make the claimed composition obvious.

Applicants request that the rejections be withdrawn.

A Notice of Allowance for all pending claims is requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Marina I. Miller, Ph.D.
Attorney of Record
Registration No. 59,091

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)